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GLOBAL OFFSHORE SAFETY

# ASSET INTEGRITY

## AN INTRODUCTORY PERSPECTIVE

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# ASSET INTEGRITY HAS MANY DIFFERENT FACETS





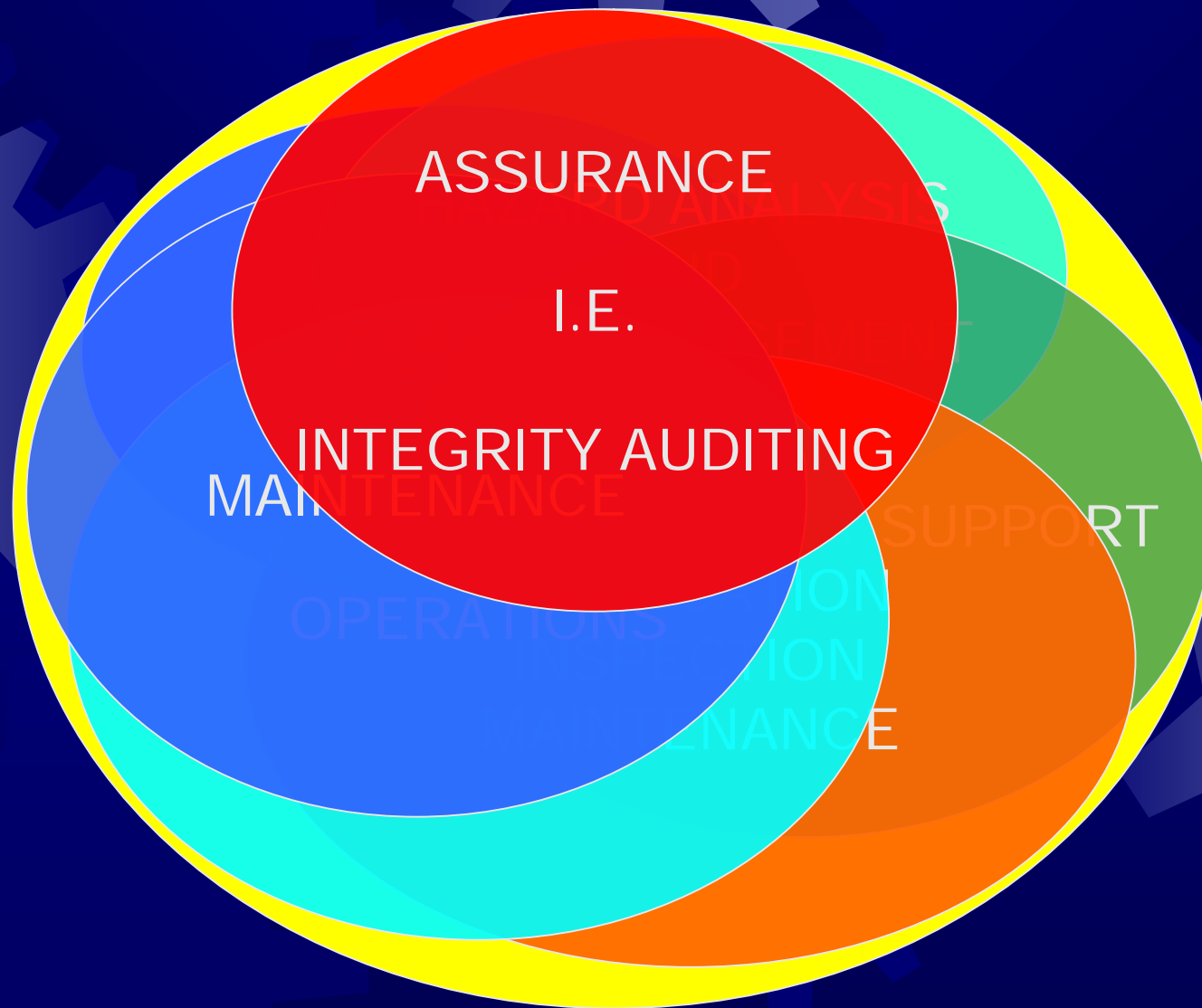
# IRF DEFINITION

The maintenance of **fitness for purpose** of offshore structures, process plant, connected pipelines and risers, wells and wellheads, drilling and well intervention facilities, and safety systems.





# ENSURING FITNESS FOR PURPOSE





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# AS REGULATORS WHAT DO WE MEAN BY ASSET INTEGRITY?





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**The Asset Must Function Effectively And Efficiently Whilst**

**SAFEGUARDING LIFE AND THE ENVIRONMENT**

**Assuring Asset Integrity Means That**

**Risks To Personnel Are Controlled And Minimised**

**Which At The Same Time**

**Will Help Ensure Stable Production**







# Safety Versus Production

- Safety And Production Are Inextricably Linked
- Good Safety Performance Means Good Business
- Stable Production Means Reduced Risks
- But
- If Integrity Management Is Sacrificed For Production, Production Will Eventually Suffer

And Lives May Be Lost

Brent B  
Texas City Refinery  
Grangemouth Refinery





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# WHAT DOES THIS MEAN IN PRACTICE?

Assuring Integrity Means **Putting In Place And  
Maintaining BARRIERS**

To Prevent, Control And Mitigate  
Accident Hazards

And  
Injuries







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# WHAT ARE THE HAZARDS?

## JET FIRE





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# WHAT ARE THE HAZARDS?

## POOL FIRE





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# WHAT ARE THE HAZARDS?

## EXPLOSIONS

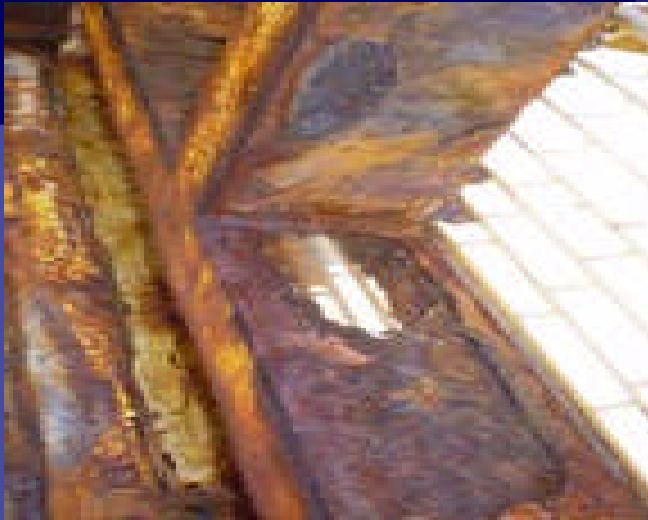






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# FABRIC DEGRADATION





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# EQUIPMENT DEGRADATION & FAILURE







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# INTEGRITY IN EQUIPMENT DESIGN

**BAD**



**GOOD**







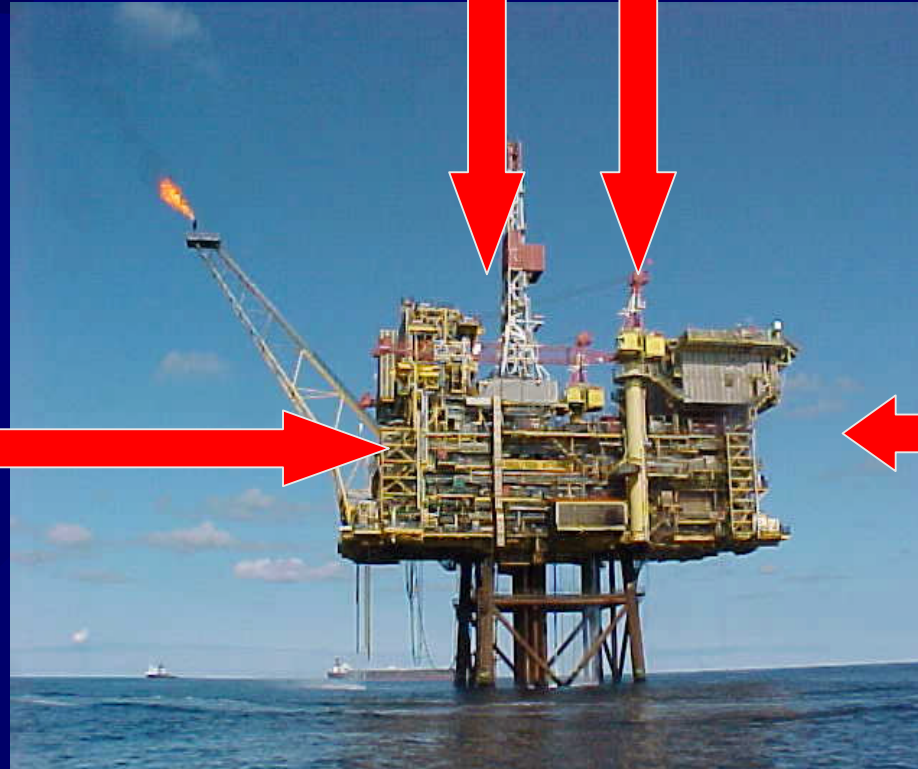
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# INTEGRITY IN INSTALLATION DESIGN

BARRIERS

HAZARDS

PEOPLE





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# INTEGRITY IN SAFETY SYSTEMS DESIGN

**Fire And Blast Walls (Control)**

**Deluge Systems (Mitigation)**

**Fire & Gas Detection (Mitigation)**

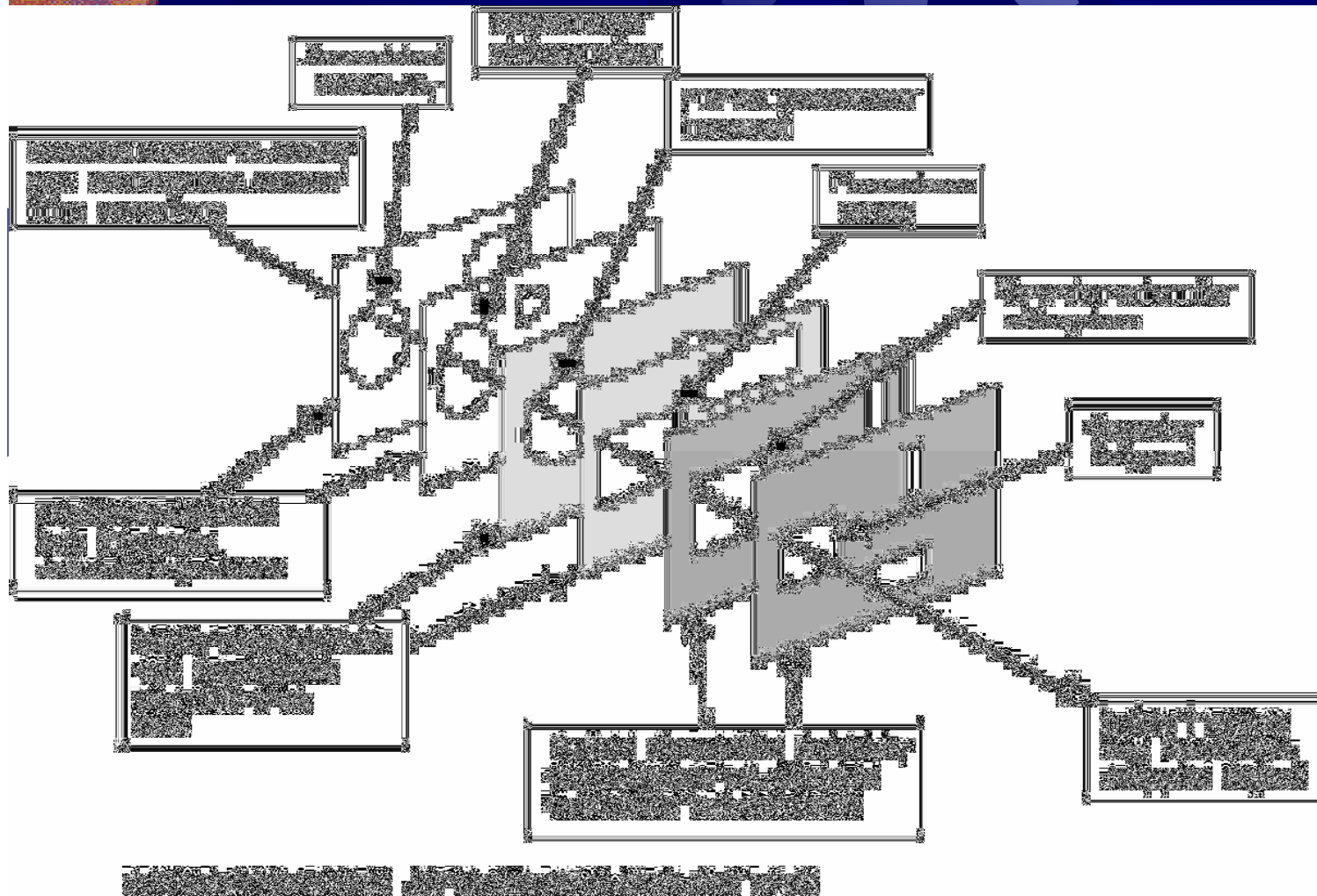
**Temporary Refuge (Protection)**





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# INTEGRITY MANAGEMENT ELEMENTS





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# ENSURING CONTINUED INTEGRITY

## Maintenance Management;

Making Sure The Barriers Will Be **AVAILABLE**

And Work When Called Upon







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# FINALLY INVESTMENT IN ASSET INTEGRITY

There is a need for **LONG TERM** investment strategies and decision making for maintenance of Asset Integrity.

There is a need for Management to deal **with the outcomes of their decisions and strategies**

KP3 FINAL REPORT

“Appropriate adjustments to its performance contract system are recommended along with greater continuity of refinery plant managers and other refinery-level managers having significant process safety leadership roles.”

[Baker Report into the Texas City Refinery Incident]





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QUESTIONS